Question 1: 6 Points

Let's define a function f as:

- $f(1) = 2$

- $f(2) = 4$

- $2f(n+1) = 3f(n) - 2f(n-1)$

Find the value of $f(3)$ and $f(4)$. Is it recursive?

Question 2: 9 Pts

Given $A = \{a, b, c\}$, and a relation on set A is $R = \{(a, a), (b, b), (a, b), (b, a)\}$. Determine (*and* justify your answers.) if the relation R is:

- Symmetric:

- Transitive:

- Reflexive:

Question 3: 6 Pts

Given $A = \{a, b, c, d, e\}$ and $B = \{1, 2, 3, p, q, r\}$, how many relations are possible from A to B, and from B to A? Show your calculation.